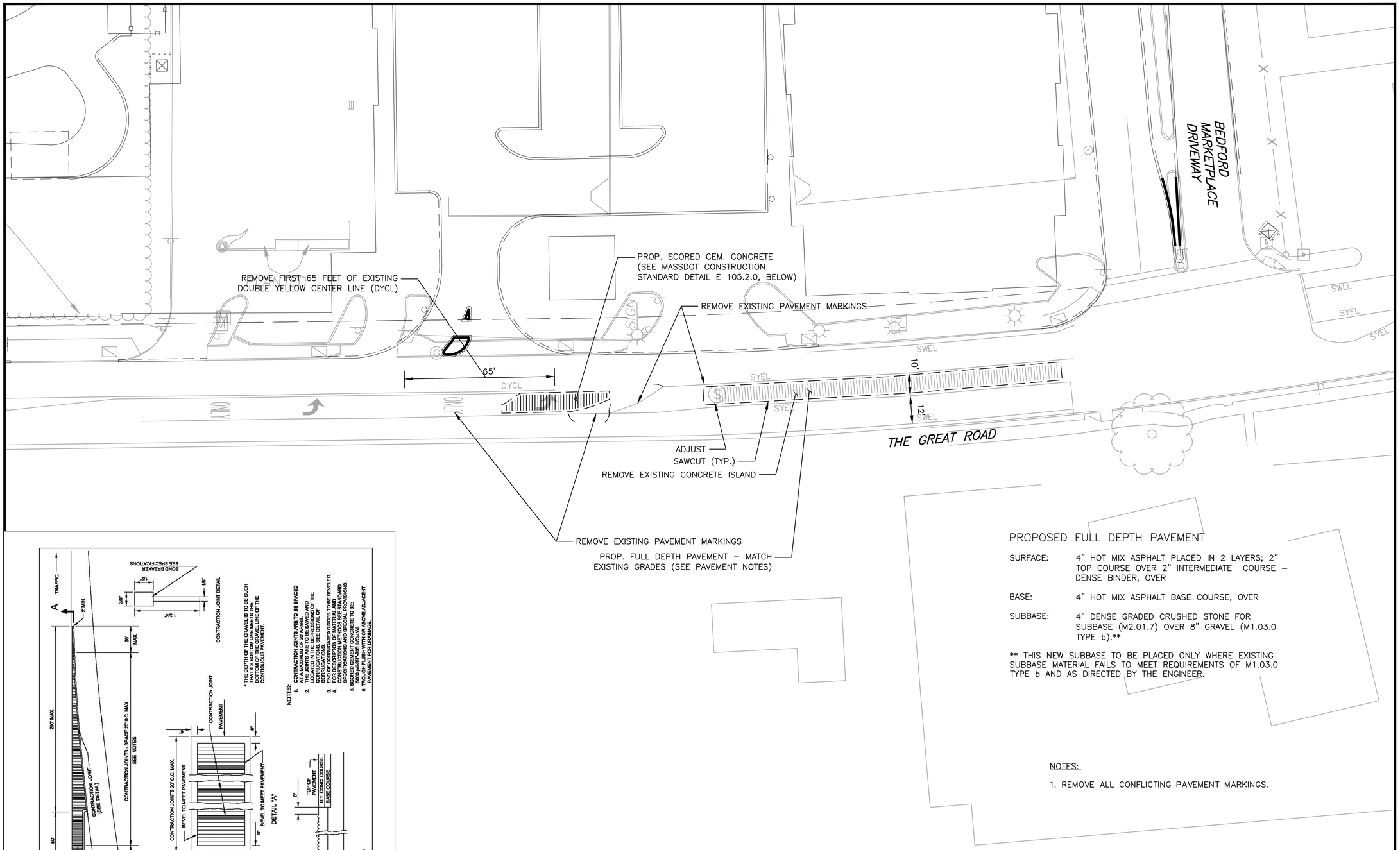

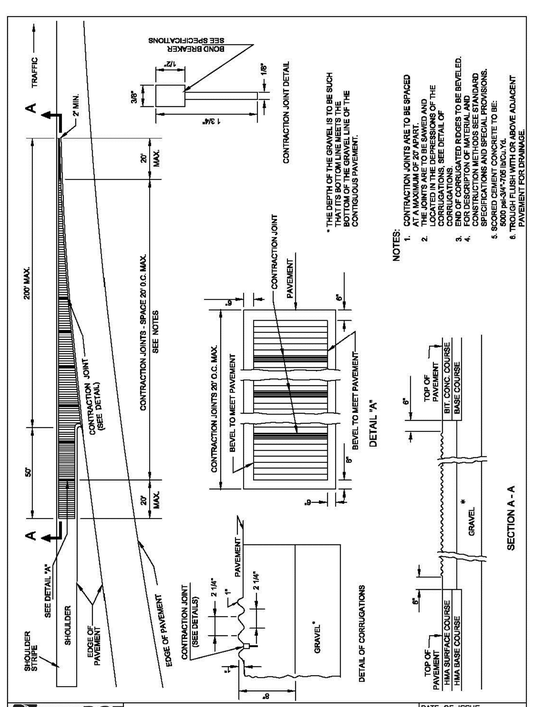

PROPOSED FULL DEPTH PAVEMENT

SURFACE: 4" HOT MIX ASPHALT PLACED IN 2 LAYERS; 2" TOP COURSE OVER 2" INTERMEDIATE COURSE – DENSE BINDER, OVER

BASE: 4" HOT MIX ASPHALT BASE COURSE, OVER

SUBBASE: 4" DENSE GRADED CRUSHED STONE FOR SUBBASE (M2.01.7) OVER 8" GRAVEL (M1.03.0 TYPE b).**

** THIS NEW SUBBASE TO BE PLACED ONLY WHERE EXISTING SUBBASE MATERIAL FAILS TO MEET REQUIREMENTS OF M1.03.0 TYPE b AND AS DIRECTED BY THE ENGINEER.

NOTES:

1. REMOVE ALL CONFLICTING PAVEMENT MARKINGS.

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COMMONWEALTH OF MASSACHUSETTS SAMUEL OFFEI - ADDO CIVIL No. 41559 REGISTERED PROFESSIONAL ENGINEER

5/3/15

PROFESSIONAL ENGINEER DATE

BEDFORD MARKETPLACE

IN

BEDFORD MASSACHUSETTS

PAVEMENT MARKING & CONSTRUCTION PLAN

DECEMBER 2014

REVISIONS:

NO.	DATE	DESC.

PREPARED FOR:
Hamlin Development, LLC
34 Essex Street
Andover, MA 01810

BSC GROUP
15 Elkins Street
Boston, Massachusetts
02127
617 896 4300

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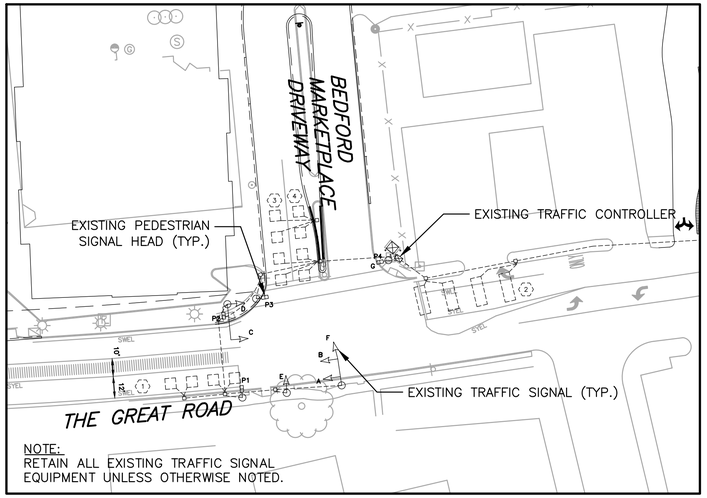
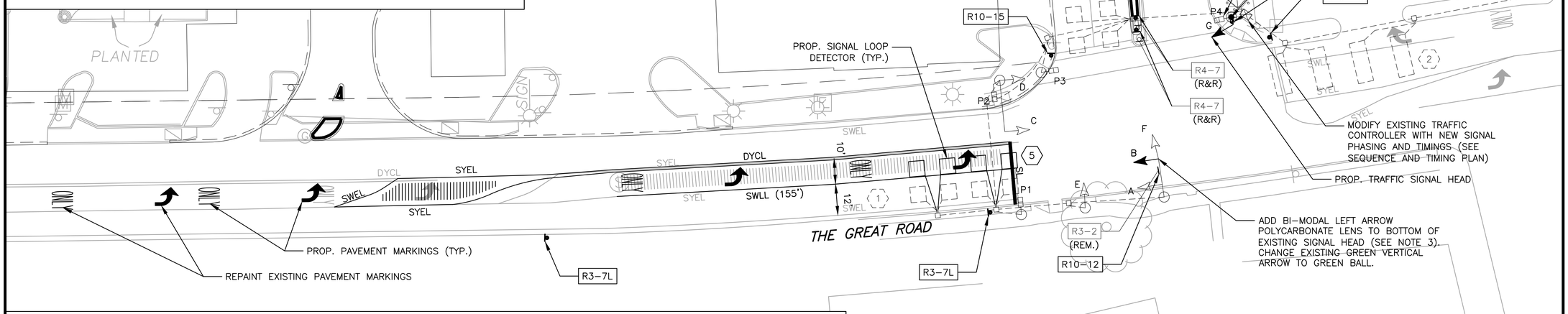
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: P:\Prj\2253022\Civil\...\2253022-LM
DWG. NO:
JOB. NO: 2-2530.25
SHEET 1 OF 3



EXISTING SIGNAL LAYOUT

SCALE: 1" = 40'



MAJOR ITEMS REQUIRED

QTY	ITEM
1	10' TRAFFIC SIGNAL POST, BASE & FOUNDATION
1	1-WAY, 4-SECTION SIGNAL HEAD, 12" L.E.D. LENS (W/ FULL VISORS)
1	12" FULL VISOR POLYCARBONATE L.E.D. LENS (W/VISORS)
1	ACCESSIBLE PEDESTRIAN SIGNAL PUSH BUTTON ASSEMBLY W/ SIGN
4	6' X 6' LOOP DETECTORS
1	LOOP DETECTOR AMPLIFIER (2-CHANNEL)

PLUS ALL NECESSARY DUCT, CABLE, FOUNDATIONS, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION.

TRAFFIC SIGN SUMMARY

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA (S.F.)
	WIDTH (in)	HEIGHT (in)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
R3-7L	30	30	LEFT LANE MUST TURN LEFT	SEE 2009 M.U.T.C.D.			2	SEE 2009 M.U.T.C.D.			P-5 (2)	6.25	12.50
R10-12	30	36	LEFT TURN YIELD ON GREEN	SEE 2009 M.U.T.C.D.			1	SEE 2009 M.U.T.C.D.			P-5 (0)	7.50	7.50
R10-15	30	30	TURNING VEHICLES TO	SEE 2009 M.U.T.C.D.			2	SEE 2009 M.U.T.C.D.			P-5 (2)	6.25	12.50

NOTES:

1. BASEPLAN WAS PARTIALLY RECONSTRUCTED FROM THE MOST RECENT (1995) TRAFFIC SIGNAL PERMIT PLAN. THE LOCATIONS OF EXISTING TRAFFIC SIGNAL EQUIPMENT ARE APPROXIMATE AND SHOULD BE VERIFIED IN THE FIELD.
2. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.
3. MINIMUM CLEARANCE BETWEEN BOTTOM OF SIGNAL HEADS AND SURFACE OF ROADWAY SHOULD BE 17.5 FEET.
4. SIGNAL POST AND HOUSINGS COLOR TO MATCH EXISTING EQUIPMENT.

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SAMUEL OFFEI - ADDO
CIVIL
No. 41559
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BEDFORD MARKETPLACE

IN

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TRAFFIC SIGNAL & SIGNING PLAN

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SHEET 2 OF 3

SEQUENCE AND TIMING CHART

				PHASE 1			PHASE 2			PHASE 3			PHASE 4			PHASE 5			PHASE 6			PHASE 7			PHASE 8			PHASE 9			EMERGENCY FLASH OPERATION
										NOT USED						NOT USED						NOT USED			NOT USED						
				SEQUENCE																											
STREET	DIR.	FACE	Ø/OL	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	
THE GREAT RD	EB	A	6	R	R	R	R	R	R				R	R	R				G	Y	R										FY
THE GREAT RD	EB	B,G	1	G/G	G/G	G/R	R	R	R				R	R	R				R	R	R										FY
THE GREAT RD	WB	C,D	2	R	R	R	G	Y	R				R	R	R				R	R	R										FY
DRIVEWAY	SB	E,F	4	R	R	R	R	R	R				G	Y	R				R	R	R										FR
PEDESTRIAN	EB,WB	P3,P4		✋	✋	✋	🚶	F/✋	✋				✋	✋	✋				✋	✋	✋							✋	✋	✋	OFF
PEDESTRIAN	NB,SB	P1,P2		✋	✋	✋	✋	✋	✋				✋	✋	✋				✋	✋	✋							🚶	F/✋	✋	OFF
				TIMING IN SECONDS																											
MINIMUM GREEN				5			10						5						10												
VEHICLE INTERVAL				1			2						1						2												
MAXIMUM GREEN				5			46						16						54												
YELLOW CLEAR					3			3						3						3											
ALL RED CLEAR						0			2						2						2										
WALK INTERVAL/CLEARANCE							7/16																					7/12		1	
PED CLEARANCE																															
DETECTOR				OFF			ON						OFF						ON									OFF			
RECALL MODE				NON-LOCK			NON-LOCK						NON-LOCK						NON-LOCK									PEDESTRIAN			

TRAFFIC SIGNAL PLAN NOTES

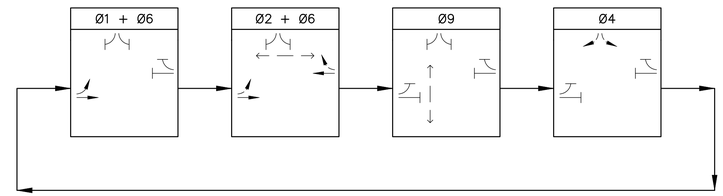
REFER TO THE MOST RECENT (1995) TRAFFIC SIGNAL PERMIT FOR TRAFFIC OPERATION GUIDELINES AND COORDINATION DATA.

LOOP DETECTOR OPERATION

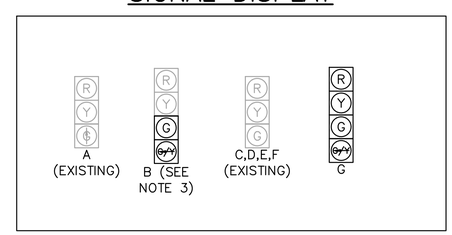
DETECTOR NUMBER	NUMBER OF SEGMENTS	LOOP SIZE (ft)	AMPLIFIER NUMBER	CHANNEL NUMBER	SPLICE PATTERN*	NUMBER OF TURNS	Ø CALLED	Ø EXTENSION	MODE: A=PULSE B=PRES. C=CALLING	DELAY (SECONDS)	EXTENSION (SECONDS)
1	SEE CURRENT TRAFFIC PERMIT FOR EXISTING DETECTOR DATA										
2	SEE CURRENT TRAFFIC PERMIT FOR EXISTING DETECTOR DATA										
3	SEE CURRENT TRAFFIC PERMIT FOR EXISTING DETECTOR DATA										
4	SEE CURRENT TRAFFIC PERMIT FOR EXISTING DETECTOR DATA										
5	4	6' X 6'	1A	1	P	3	1	1	B	0	0

*S = SERIES, P = SERIES/PARALLEL, BL=BICYCLE LOOP

PREFERENTIAL PHASING SEQUENCE



SIGNAL DISPLAY



NOTES:

1. ALL SIGNAL LENSES SHALL BE 12" DIA. LED.
2. ALL SIGNAL HEADS SHALL BE FIXED MOUNTED.
3. CHANGE EXISTING GREEN VERTICAL ARROW TO GREEN BALL. ADD BI-MODAL LEFT ARROW POLYCARBONATE LENS TO BOTTOM OF EXISTING SIGNAL HEAD.
4. ALL SIGNAL HEADS SHALL HAVE FULL TUNNEL VISORS.
5. NEW SIGNAL HOUSINGS SHALL MATCH COLOR AND STYLE OF EXISTING SIGNAL HOUSINGS.

SEQUENCE NOTES

1. ANY PHASE NOT CALLED WILL BE SKIPPED. SIGNAL IDENTIFICATION WILL NOT CHANGE IF THE ASSIGNED RIGHT OF WAY DOES NOT CHANGE DURING THE NEXT PHASE CALLED.

2. THE RIGHT-OF-WAY MAY BE ASSIGNED TO ANY PHASE OR ANY COMBINATION OF NON-CONFLICTING PHASES.

LOOP DETECTOR OPERATION NOTES:

1. SEE LOOP DETECTOR DETAIL SHEETS FOR SPLICE PATTERN AND OTHER INFORMATION.

2. DELAY AND EXTENSION TIMES ARE IN SECONDS.

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SHEET 3 OF 3